(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(54) Title: ACCESSING SERVICES AND PRODUCTS VIA THE INTERNET
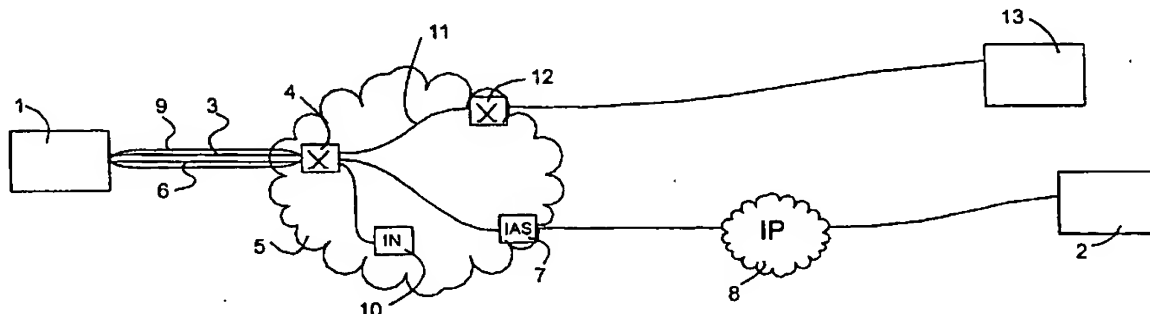
(57) Abstract: A method of accessing a service or purchasing a product available from a merchant, the method comprising: establishing a communication link between a user terminal and said merchant via the Internet; downloading a software application to the terminal from the server via the Internet link; and running the software application at the terminal to initiate, using a premium rate telephone number, a communication between the user terminal and the merchant, whereby the user can be authorised to access the service or purchase the product.

ACCESSING SERVICES AND PRODUCTS VIA THE INTERNET

Field of the Invention

The present invention relates to accessing services and products via the Internet.

Background to the invention

Many users of the Internet will be familiar with services ordered or provided via the Internet which require payment. One example is that of on-line content provided by an Internet "merchant", which cannot be viewed unless some form of payment is made. One method of paying for such services is to use a telephone to dial a premium rate number. The user then listens to a user identity and password which are provided over the telephone line. This user identity and password can then be used to access the required service, which in the example above would enable the user to read the on-line content. The user's telephone operator subsequently pays an agreed sum to the merchant.

From the point of view of the user of the service, this method of payment is a time-consuming manual exercise. There is also a risk that the user may hear their user identity or password incorrectly, or may incorrectly write the information down for later use.

Summary of the Invention

According to a first aspect of the invention there is provided a method of accessing a service or purchasing a product available from a merchant, the method comprising:

establishing a communication link between a user terminal and said merchant via the Internet;

downloading a software application to the terminal from the server via the Internet link; and

running the software application at the terminal to initiate, using a premium rate telephone number, a communication between the user terminal and the merchant, whereby the user can be authorised to access the service or purchase the product.

The step of downloading the software application to the terminal is preferably carried out automatically when the user selects to access the service or purchase the product.

In a preferred embodiment, the communication link comprises one B channel of an ISDN line, and the initiated communication makes use of the other B channel of the ISDN line.

In another preferred embodiment, the communication link comprises a circuit switched or packet switched telephone connection and the initiated communication makes use of SMS messaging.

Preferably, as a result of the initiated communication an authorisation code is sent from the merchant to the user. The authorisation code may be sent to the user using the same communication means over which the communication was initiated by the said software application. The authorisation code may be received by said downloaded software application and then sent automatically from the user to the merchant via said communication link.

The software application preferably comprises a JAVA applet.

Brief Description of the Drawings

Figure 1 is a schematic diagram showing a system according to a first embodiment of the present invention;

Figure 2 is a schematic diagram showing a system according to a second embodiment of the present invention; and

Figure 3 is a flow diagram of a method of accessing a service over the Internet according to the present invention.

Detailed Description of Certain Embodiments

Figure 1 shows a system in which a user terminal 1 is coupled to a merchant's web server 2 according to a first embodiment of the present invention. The user terminal 1 is connected, via an ISDN connection 3, to a local exchange 4 in a Public Switched Telephone Network (PSTN) 5. This connection occupies one of the two B channels 6 of the ISDN connection. The PSTN 4 connects the user to the Internet 8 via for example an Internet Access Server (IAS) 7. The user terminal 1 typically connects to the Internet via a free telephone phone number or local rate number.

A user may contact the remote web server 2 by entering the URL of the web server 2 into his Internet browser, thus establishing an IP link from the user terminal 1 to the web server 2 via the ISDN line 3, local exchange 4, IAS 7 and Internet 8. Assuming that the user selects a service for which payment is required, this action causes a small software application, for example a JAVA applet, to be downloaded into his terminal via the IP link. The software application is executed automatically by the user terminal 1 and causes a "premium rate" telephone number to be called using the second B channel 9 of the ISDN connection 3.

Typically, the user's local exchange 4 sends a query to an Intelligent Network (IN) Node 10 associated with that premium rate number. The IN node 10 maps the premium rate number to a number associated with the merchant and returns this information, together with tariff information to be associated with the call, to the local exchange. Upon receipt of this information, the local exchange establishes a connection 11, via the PSTN 5, to the local exchange 12 of the merchant. A server 13, coupled to a modem, is alerted to the incoming call, and answers the call.

The merchant's telephone server 13 and web server 2 each comprise a database of authorisation codes. Assuming that a connection is established between the user terminal 1 and the telephone server 13, the telephone server 13 returns an authorisation

code to the user terminal 1 via the connection 11 and second ISDN B channel 9, using a user-to-user service. The applet running on the user terminal 1 causes this authorisation code to be automatically looped back to the web server 2 via the IP link (i.e. using the first ISDN B channel 6). Upon receipt of the authorisation code, the web server grants access to the service requested by the user.

The operator of the PSTN 5 will pay a charge to the merchant as determined at the IN node 10, and this charge will be passed on by the operator to the user in his telephone bill.

It will be appreciated that the embodiment described above includes one example of a system by which access is granted to the service for which payment is required, and that other methods of granting access are possible. For example, the merchant's telephone server 13 and web server 2 may be located on the same computer, with the two processes running in parallel, so that when a request is made via the telephone connection 11 for an authorisation code to be provided by the telephone server 13, the web server 2 will automatically be expecting a request for access with that authorisation code because it has been notified to this effect by the telephone server 13. Alternatively, the telephone server 13 and web server 2 may be located on different computers which are linked so that when an authorisation code is issued by the telephone server 13, this information is also relayed to the web server 2.

In another embodiment, after the premium rate telephone number has been dialled by the user terminal and a connection 11 established to the merchant's telephone server 13, information including the IP address of the user terminal is passed to the telephone server 13. This information is passed to the web server 2, which will then allow a connection to the service to be made by that IP address. In this embodiment there is no requirement for an authorisation code to be returned to the user.

Figure 2 shows a system in which a user terminal 21 is coupled to a merchant's web server 22 according to a second embodiment of the present invention. In this case the user terminal 21 is a mobile wireless terminal and is registered with a Public Land Mobile Network (PLMN) comprising a radio access network 23, and Global System for

Mobile Communications (GSM) and General Packet Radio Service (GPRS) core networks 24, 25. Using the access network 23 and the GPRS core network 25, the terminal 21 is able to connect to the Internet.

As in the first embodiment, a user may contact the remote web server 22 by entering the URL of the web server 22 into his telephone's Internet browser, thus establishing a IP (GPRS) link between the user terminal and the merchant's web server. Assuming that the user selects a service for which payment is required, this action causes a JAVA applet to be downloaded to the user terminal via the IP link. The applet runs automatically on the user terminal, causing a Short Message Service (SMS) message to be sent to a premium rate telephone number. SMS is a service provided by the GSM network 24 for sending short messages over a signalling channel.

The SMS message directed to a premium rate telephone number is re-routed, in a similar manner as in the first embodiment described above, to an "SMS" server 31 maintained by the merchant (the SMS server 31 being connected to a wireless mobile terminal). The merchant's SMS server 31 returns information, including an authorisation code, to the user terminal 21 in the form of a return SMS message via the GSM and access networks 23, 24. The applet running on the user terminal 1 automatically sorts the returned SMS message including the authorisation code from any other short messages which might have been received, and causes this authorisation code to be automatically transmitted to the web server 22 via the IP (GPRS) link. Upon receipt of the authorisation code, the web server grants access to the service, in the same manner as described above for the first embodiment.

Figure 3 shows the sequence of events involved in accessing a service over the Internet. A user terminal 41 makes a connection 42 to the Internet via a first channel. This first channel may be a first B channel of an ISDN line or a mobile telephone connection as described for the two embodiments above. When the connection to the Internet has been made, the user connects 43 to the merchant's web server. The user then selects a service 44. The web server determines 45 whether or not payment is required to access this service. If payment is not required, the user may access the service 46. If payment is required, a software application is downloaded 47 to the user terminal via the internet

and the first channel. This software application is automatically executed 48 at the user terminal.

The software application automatically causes a message to be sent 49 over a second channel to a premium rate telephone number. This message is routed to a telephone or SMS server maintained by the merchant and the charge for this call eventually appears on the user's telephone bill. The second channel may be the second B channel of an ISDN line, or the Short Messaging Service (SMS) of a mobile network, as described in the embodiments above. The merchant's server returns an authorisation code 47 to the user terminal.

The downloaded software application running at the user terminal checks to see whether an authorisation has been received 50 via the second channel. If no authorisation has been received, the user is notified 51, and user access to the service is denied 52. If authorisation has been safely received, the authorisation is returned to the web server via the first channel and the Internet 53, so the user can access the service 54.

It will be appreciated that the invention is not restricted to the embodiments described above. For example, although the embodiments described above relate to a method for accessing a service, similar methods can be used to purchase products, e.g. software, books etc. via the Internet and fall within the scope of the invention.

CLAIMS:

1.   A method of accessing a service or purchasing a product available from a merchant, the method comprising:

establishing a communication link between a user terminal and said merchant via the Internet;

downloading a software application to the terminal from the server via the Internet link; and

running the software application at the terminal to initiate, using a premium rate telephone number, a communication between the user terminal and the merchant, whereby the user can be authorised to access the service or purchase the product.

2.   A method as claimed in claim 1, wherein the step of downloading the software application to the terminal is carried out automatically when the user selects to access the service or purchase the product.

3.   A method as claimed in claim 1 or 2, wherein the communication link comprises one B channel of an ISDN line, and the initiated communication makes use of the other B channel of the ISDN line.

4.   A method as claimed in claim 1 or 2, wherein the communication link comprises a circuit switched or packet switched telephone connection and the initiated communication makes use of SMS messaging.

5.   A method as claimed in any preceding claim, wherein as a result of the initiated communication an authorisation code is sent from the merchant to the user.

6.   A method as claimed in claim 5, wherein the authorisation code is sent to the user using the same communication means over which the communication was initiated by the said software application.

7.   A method as claimed in claim 5 or 6, wherein said authorisation code is sent from the user to the merchant via said communication link.

8.   A method as claimed in any preceding claim, wherein the software application comprises a JAVA applet.
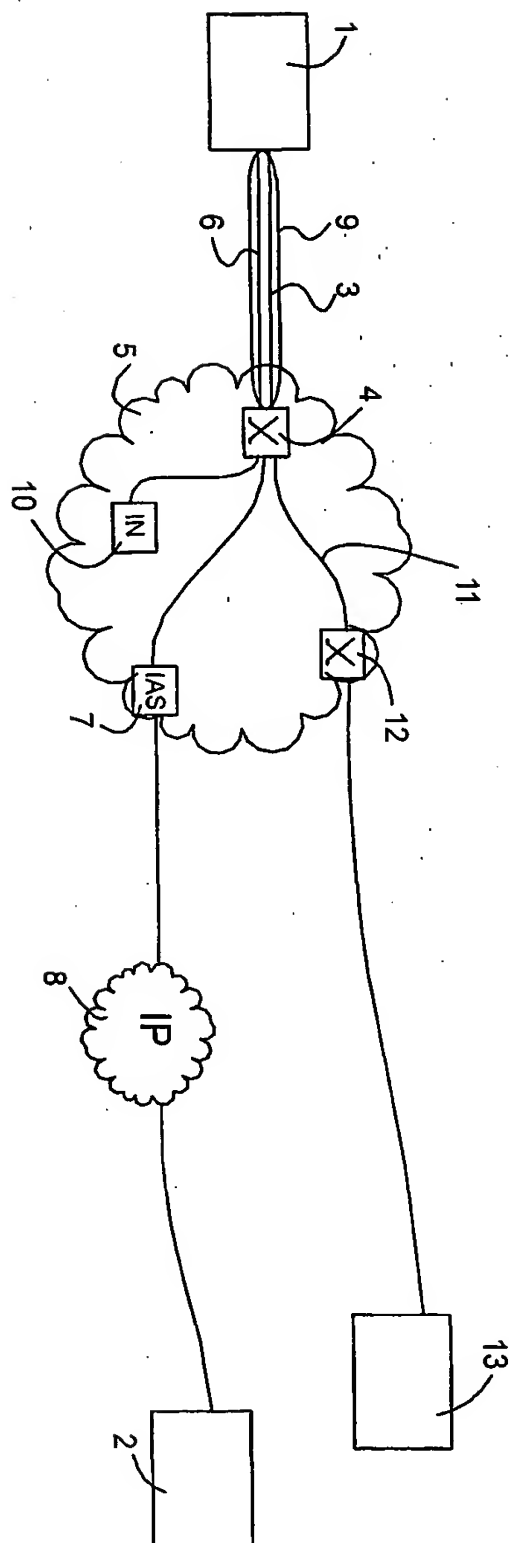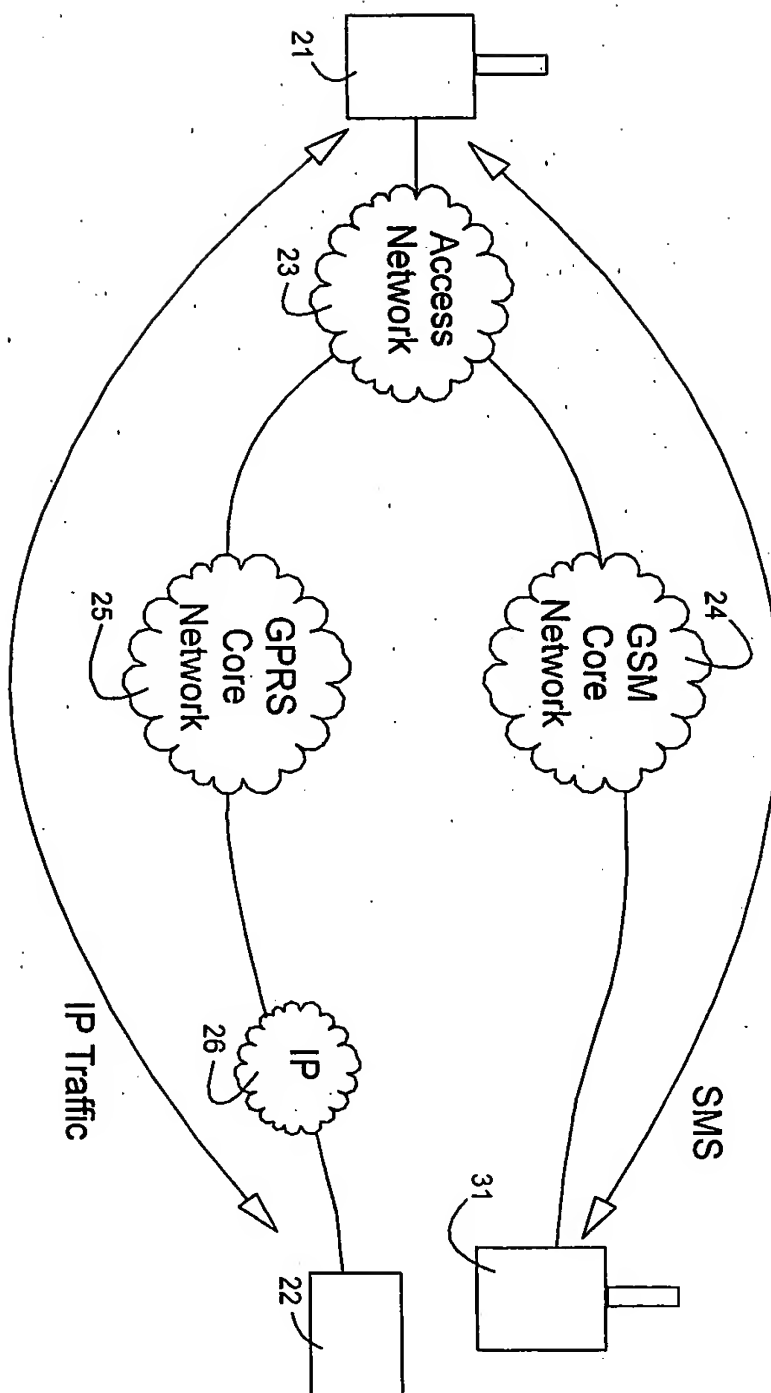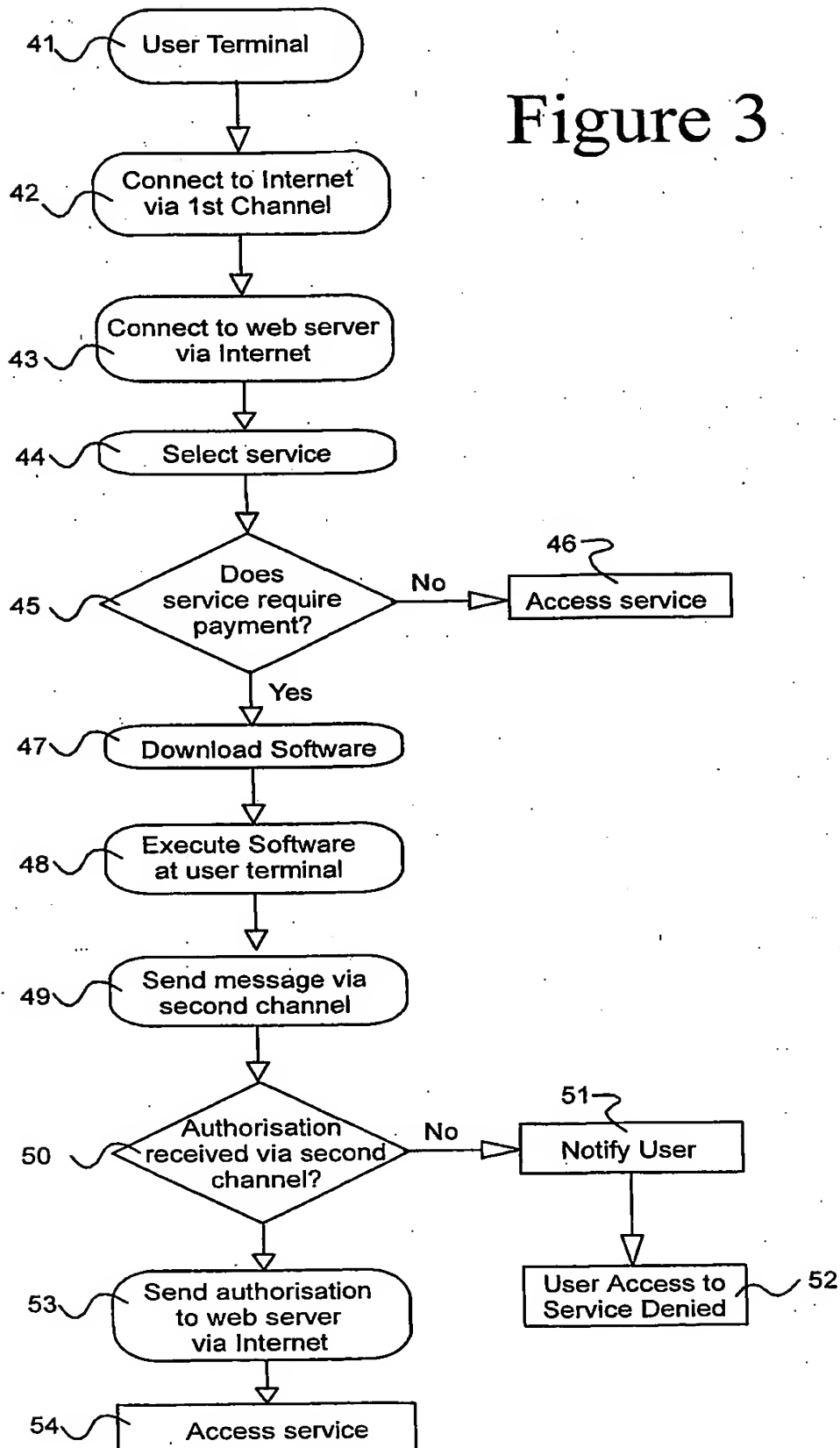
Figure 1

Figure 2

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Figure 3

INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7   H04L29/06   G06F17/60

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7   H04L   G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, INSPEC, IBM-TDB, PAJ, COMPENDEX

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category°	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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A	WO 99 57663 A (ECHARGE CORP) 11 November 1999 (1999-11-11) abstract page 7, line 20 -page 16, line 29	1-5,8
A	US 6 012 090 A (CHUNG PI-YU ET AL) 4 January 2000 (2000-01-04) abstract column 3, line 48 -column 12, line 47	1,2,4-8

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[X] Further documents are listed in the continuation of box C.   [X] Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

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"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
24 August 2001	31/08/2001

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Marcu, A

Form PCT/ISA/210 (second sheet) (July 1992)

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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Information on patent family members

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